


[Subscribe \(Full Service\)](#) [Register \(Limited Service, Free\)](#) [Login](#)

Advanced Search

THE ACM DIGITAL LIBRARY

Enter words, phrases or names below. Surround phrases or full names with double quotation marks.



Words or Phrases

Find with

all of
this
text
(and)

any
of
this
text
(or)

none
of
this
text
(not)

Names

Find

with names

using all any none of the
names

Keywords

Find author's keywords

using all any none of the
keywords

Affiliations

Find company or
school

using all any
 none of the affiliations

Publication

Find publication

using all any none of the
names

Find publisher

using any none of the names

Published since Published before

In publication types Journal Proceeding Transaction Magazine Newsletter

Conference

Find sponsor names

using all any none of the

Find location

using any none of the locations

names
Find year (yyyy) using any none of the years

Identification codes

Find ISBN/ISSN Find DOI

Computing Classification System (CCS)

Find node

Find subject/noun

Look at primary category only

Required components

Results must have Full Text Abstract Re



The ACM Portal is published by the Association for Computing Machinery. Copyright © 2009 ACM, Inc.

[Terms of Usage](#) [Privacy Policy](#) [Code of Ethics](#) [Contact Us](#)